

Further notes on Migadopinae from the Falkland Islands

(Insecta, Coleoptera, Carabidae)

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Baehr, M. (1999): Further notes on Migadopinae from the Falkland Islands (Insecta, Coleoptera, Carabidae). – *Spixiana* 22/1: 47-52

Additional material collected on some of the smaller Islands of the Falkland Archipelago reveals a more complex taxonomic situation of the *Pseudomigadops falklandicus*-complex than mentioned in the most recent treatment (Baehr 1997). In accordance with the recently recorded sympatric occurrence of populations of *P. falklandicus handkei* Baehr and *P. falklandicus fuscus* Baehr on the small Sea Lion Island south of East Falkland Island both subspecies are raised to specific status.

Two additional taxa are described that clearly belong to the recently described taxa *fuscus* and *handkei*, respectively: *P. fuscus sericeus*, subsp. nov. occurring on Sea Lion Island, and *P. handkei punctatus*, subsp. nov. occurring on Saunders Island north of West Falkland Island.

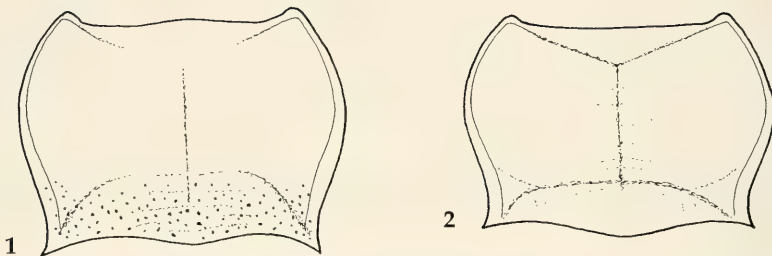
The presently known distribution pattern suggests the existence of a widespread species on East Falkland Island – and perhaps also West Falkland Island – (*P. falklandicus* Waterhouse) that is surrounded by different subspecies of the related species *P. fuscus* Baehr and *P. handkei* Baehr on certain smaller islands.

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Introduction

Until recently, only one species of the genus *Pseudomigadops* (*P. falklandicus* Waterhouse) was recorded from the Falkland Islands (Jeannel 1939, Schweiger 1959, Roux & Voisin 1982). Recently, I described two subspecies of this species from small islands south of East Falkland Island and north of West Falkland Island, respectively (Baehr 1997), namely *P. falklandicus handkei* and *P. falklandicus fuscus*. Due to the still rather similar external and aedeagal morphology of both taxa, and in view of the occurrence on small islands in close neighbourhood of the larger East Falkland and West Falkland Islands, respectively, I preferred to maintain the new taxa as subspecies of *P. falklandicus* rather than separate species. However, additional material recently received from Drs. K. Handke (Delmenhorst) and K. G. Bernhardt (Osnabrück), when the mentioned paper was just printed, revealed that the taxonomic situation is much more complex. The recently recorded sympatric occurrence of populations of both, *P. falklandicus handkei* and *P. falklandicus fuscus* on the small Sea Lion Island off the coast of East Falkland Island convinced me that both well distinguishable subspecies must be raised to specific status. Moreover, now I received representatives of two additional taxa that are closely related to the taxa *handkei* and *fuscus*, respectively, and which are best regarded as subspecies of those taxa. As a consequence, the taxa *handkei* and *fuscus* are herewith raised to specific status, and two new subspecies are described.

Measurements are similar to those in Baehr (1997).



Figs 1-2. Outline of pronotum. **1.** *Pseudomigadops handkei punctatus*, subsp. nov. **2.** *P. fuscus sericeus*, subsp. nov.

Note. Through an apparent printer error while computerizing the figures 1-3 (pronota of *P. f. falklandicus*, *P. falklandicus handkei*, and *P. falklandicus fuscus*) in my paper on the *Pseudomigadops* of the Falkland Islands (Baehr 1997), the three pronota appear much too narrow. To get a correct impression of the actual proportions, the pronota should be widened by a factor of about 40 %.

Types

The holotypes of the new subspecies are donated to the Zoologische Staatssammlung, München, though are kept as permanent loan in the working collection of the author (ZSM-CBM).

Pseudomigadops handkei Baehr (stat. nov.)

Pseudomigadops falklandicus handkei Baehr, 1997: p. 42; figs 2, 5.

Pseudomigadops handkei handkei Baehr (stat. nov.)

Pseudomigadops falklandicus handkei Baehr, 1997: p. 42; figs 2, 5.

This species was so far known only from the type series from Sea Lion Island south of East Falkland Island. Recently, I received an additional specimen from the same locality and with the same data that is distinguished from the type series by oblique rather than straight basal lateral border, and by slightly more extensively punctate base of the pronotum. The aedeagus, however, exactly matches that of the type series. The specimen is thus regarded an individual variation of *P. h. handkei*.

Pseudomigadops handkei punctatus, subsp. nov.

Figs 1, 3, 4

Types. Holotype: ♂, Falkland-Inseln, Saunders Island, 31.01.1995, leg. Dr. K. Handke (ZSM-CBM).

Diagnosis. The subspecies differs from the nominate subspecies by denser and coarser puncturation of the base of the pronotum, very acute, slightly outturned basal angles of the pronotum, and less arcuate aedeagus with longer excised upper part of the preapical surface.

Description

Measurements. Length: 7.5 mm; width: 3.8 mm. Ratios. Width/length of prothorax: 1.53; width base/apex of prothorax: 1.21; width widest diameter/base of prothorax: 1.17; width prothorax/head: 1.47.

Colour. As in nominate subspecies, elytra likewise with distinct greenish lustre.

Head. Similar to nominate subspecies.

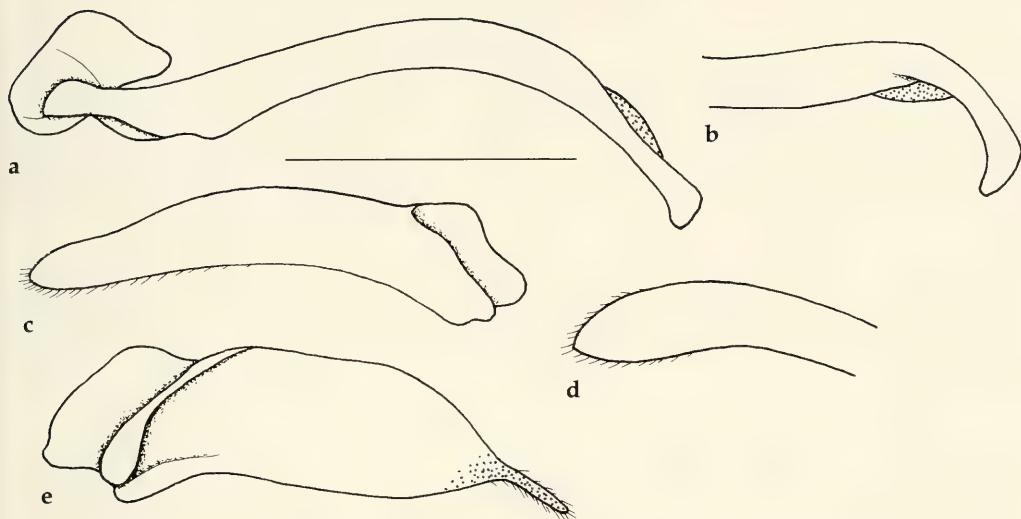


Fig. 3. *Pseudomigadops handkei punctatus*, subspec. nov. ♂ genitalia. a. Aedeagus, left side, lateral view. b. Aedeagus, apex from below. c. Right paramere, lateral view. d. Right paramere, apex, ventrolateral view. e. Left paramere, lateral view. Scale: 1 mm.

Pronotum (Fig. 1). Rather similar to nominate subspecies, but with markedly acute and posteriad and laterad produced basal angles; basal surface with coarser and denser puncturation.

Elytra. Similar to nominate subspecies.

Lower surface. Similar to nominate subspecies.

Legs. In male four basal tarsomeres of protarsus and three basal tarsomeres of mesotarsus widened and squamose.

♂ genitalia (Fig. 3). Rather similar to nominate subspecies, but lower surface of aedeagus slightly less curved, and the excised upper part of the preapical surface longer. Apex of right paramere more delicate.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 4). Saunders Island north of West Falkland Island, known only from type locality.

Habits. Unknown. Holotype collected at end of January.

Etymology. The name refers to the coarsely punctate base of the prothorax.

Pseudomigadops fuscus Baehr (stat. nov.)

Pseudomigadops falklandicus fuscus Baehr, 1997: p. 43; figs 3, 6.

Pseudomigadops fuscus fuscus Baehr (stat. nov.)

Pseudomigadops falklandicus fuscus Baehr, 1997: p. 43; figs 3, 6.

This subspecies is still known only from the type series from Pebble Island, north of West Falkland Island.

Pseudomigadops fuscus sericeus, subspec. nov.

Figs 2, 4

Types. Holotype: ♀, Falkland-Inseln, Sea Lion Island, 25.-27.1.1995, leg. Dr. K. Handke (ZSM-CBM).

Diagnosis. The subspecies differs from the nominate subspecies by markedly acute and laterad protruding basal angles of the pronotum, completely red 1st - 4th basal antennomeres, and less distinct puncturation though coarser microreticulation of the elytra, that give them a conspicuously sericeous lustre.

Description

Measurements. Length: 8.9 mm; width: 4.4 mm. Ratios. Width/length of prothorax: 1.51; width base/apex of prothorax: 1.35; width widest diameter/base of prothorax: 1.12; width prothorax/head: 1.55.

Colour. Rather similar to nominate subspecies, but 1st - 4th antennomeres completely red, without any infuscations.

Head. Similar to nominate subspecies.

Pronotum (Fig. 2). Rather similar to nominate subspecies, but with markedly acute and posteriad and laterad produced basal angles.

Elytra. Rather similar to nominate subspecies, but puncturation of striae weaker and microreticulation more pronounced and more sericeous; hence puncturation of striae even more inconspicuous.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies. Structure of male protarsus and mesotarsus unknown.

♂ genitalia. Unknown.

♀ genitalia. As in nominate subspecies.

Variation. Unknown.

Distribution (Fig. 4). Sea Lion Island, south of East Falkland Island, known only from type locality.

Habits. Unknown. Holotype collected at end of January.

Etymology. The name refers to the markedly sericeous surface of the elytra.

Key to the *Pseudomigadops falklandicus*-complex on the Falkland Islands

For better recognition the figures in my previous paper (Baehr 1997) are included as **B97** fig.

1. Surface colour brown without any greenish lustre. Basal third of pronotum abruptly narrowed, lateral borders in basal part almost parallel (**B97** fig. 3), or outturned (Fig. 2). Aedeagus large, less curved near apex, distinctly widened in apical half (**B97** fig. 6) 2.
 - Surface colour blackish-brown with distinct greenish lustre. Basal third of pronotum more evenly narrowed, lateral borders in basal part oblique (**B97** figs 1, 2). Aedeagus either smaller, more curved near apex, and apex but gently widened (Fig. 3; **B97** fig. 5); or thinner, more curved and asymmetric, and not widened in apical half (**B97** fig. 4) 3.
2. Lateral borders of basal third of pronotum parallel, basal angles almost rectangular (**B97** fig. 3). 1st-4th antennomeres partly dark. Puncturation of the elytral striae coarser though microreticulation of intervals weaker. Pebble Island north of West Falkland Island *P. fuscus fuscus* Baehr
 - Lateral borders of basal third of pronotum markedly outturned, basal angles acute (Fig. 2). 1st-4th antennomeres completely reddish. Puncturation of the elytral striae less coarse though microreticulation of intervals coarser. Sea Lion Island south of East Falkland Island
..... *P. fuscus sericeus*, subspec. nov.
3. Larger species, length c. 8.5 mm. Pronotum densely and coarsely punctate across base and in lateral channel, lateral channel anteriorly wider (**B97** fig. 1). Femora and four basal antennomeres dark reddish-brown. Aedeagus large, in apical half not widened, with rather distinctly hook-shaped apex (**B97** fig. 4). East Falkland Island *P. falklandicus* (Waterhouse)
 - Smaller species, length <7.5 mm. Pronotum less densely punctate across base and in lateral chan-



Fig. 4. Map of Falkland Islands with distribution of the *Pseudomigadops*-complex. 1. East Falkland Island. 2. West Falkland Island. 3. Sea Lion Island. 4. Pebble Island. 5. Saunders Island. *Pseudomigadops handkei handkei*: ●; *P. handkei punctatus*: ■; *P. fuscus fuscus*: ▼; *P. fuscus sericeus*: ▲. Scale: 25 km.

nel, lateral channel anteriorly narrow (B97 fig. 2). Femora and four basal antennomeres light reddish. Aedeagus small, in apical half slightly widened, with barely hook-shaped apex (Fig. 3; B97 fig. 5)..... 4.

- 4. Pronotum almost impunctate, basal angles rectangular (B97 fig. 2). Aedeagus more arcuate, with shorter excised upper part of the preapical surface (B97 fig. 5). Sea Lion Island south of East Falkland Island *P. handkei handkei* Baehr
- Pronotum more densely punctate, basal angles very acute, somewhat outturned (Fig. 1). Aedeagus less arcuate, with longer excised upper part of the preapical surface (Fig. 3). Saunders Island north of West Falkland Island *P. handkei punctatus*, subsp. nov.

Discussion

The discovery of a population of the taxon *fuscus* Baehr on the small Sea Lion Island south of East Falkland Island from where until now only the taxon *handkei* Baehr was recorded is evidence of the sympatric occurrence of both taxa that formerly were regarded subspecies of *P. falklandicus* Waterhouse. The latter is a species widespread on East Falkland Island and perhaps also West Falkland Island. On that reason both, *P. falklandicus handkei* and *P. falklandicus fuscus* herein are raised to full specific rank. This reclassification was also necessary, because in the meantime two slightly different forms were found one of which clearly belongs to *handkei*, the other to *fuscus*, respectively. Hence the taxonomic situation has become more complex and at present appears as following: An apparently widespread species on East Falkland Island – and probably also on West Falkland Island – (*P. falklandicus* Waterhouse) is encircled by populations of the related species *P. handkei* Baehr and *P. fuscus* Baehr on several of the smaller surrounding islands. Both these species gave rise to subspecies on certain smaller islands, at the present state of knowledge to one subspecies each. On one island at least (Sea Lion Island) both species occur sympatrically.

Thus, further more scrutinized collecting work on the Falkland Archipelago should settle mainly the following questions:

- the taxonomic status of the *Pseudomigadops* occurring on West Falkland Island;
- the degree to which the smaller surrounding islands are populated by *Pseudomigadops* species and to which known or yet undescribed taxa the occurring populations belong;
- which phylogenetic relations exist between the *Pseudomigadops* populations of the larger East Falkland and West Falkland Islands and the smaller surrounding islands.

On the basis of settling of these questions a better established scenario of the colonization of the Falkland Islands and of the further evolutive history of the *Pseudomigadops* could be outlined. At present, the complex taxonomic situation should be stressed, a situation that may appear even more complex in future.

At any rate, taxonomic radiation of the *Pseudomigadops falklandicus*-complex on the Falkland Archipelago must have been considerable, and this radiation most probably occurred in surprisingly recent times.

Acknowledgements

I am greatly indebted to Drs. K. Handke (Delmenhorst) and K. G. Bernhardt (Osnabrück), who kindly submitted additional material from Dr. Handke's trip to the Falkland Islands.

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